

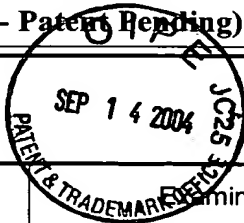
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TRANSMITTAL LETTER
(General - Patent Pending)

Docket No.
END00-0027-US1 (00240078AA)

In Re Application Of: Foster et al.



Application No. 09/534,901	Filing Date 03/23/2000	Examiner A. Mirza	Customer No. 30743	Group Art Unit 2141	Confirmation No. 9964
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Title: **BLOCK-BASED NEGATIVE FILTERING OF MPEG-2 COMPLIANT TABLE SECTIONS**

COMMISSIONER FOR PATENTS:

Transmitted herewith is:

Reply Brief of Appellants Under 37 C.F.R. 1.193 (in triplicate)
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Dated: September 14, 2004

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of

Eric M. Foster et al.

Appeal No.:

Serial No.: 09/534,901

Group Art Unit: 2141

Filed: March 23, 2000

Examiner: A. Mirza

For: BLOCK-BASED NEGATIVE FILTERING OF MPEG-2 COMPLIANT
TABLE SECTIONS

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REPLY BRIEF OF APPELLANTS UNDER 37 C.F.R. 1.193

Sir:

Applicants have filed a timely Notice of Appeal from the action of the Primary Examiner in finally rejecting claims 1 - 14 in this application and a timely Brief on Appeal on April 12, 2004. This Reply Brief is in answer to the Examiner's response to Appellants arguments stated in the Examiner's Answer mailed July 14, 2004.

Some confusion in regard to the nature of the invention appears evident in the Examiner's remarks in the Examiner's Answer. The invention is of general utility for filtering of digital data but is most directly applicable to the processing of massive data streams such as may be used for transmission of many channels of audio/video information particularly in a compressed form such as under the MPEG standard. Under such a standard, many different tables are used for many different purposes and it appears there may be some

confusion on the part of the Examiner in regard to particular tables recited in the claims.

As discussed on pages 2 - 4 of the present specification, extraction of a desired program requires filtering on the table identification value and to pass only data corresponding to a particular table ID value (or only certain bits thereof) and to discard the remainder of program data, referred to as positive filtering. This function is relatively simple and requires little hardware support since the table ID value consists of a relatively short length and is well-understood in the art.

However, under such a standard, the invention is principally directed to avoiding the processing involved in unconditional storage of extensive non-audio/video information in the form of a table which, since it is often needed shortly after a set top box (STB) is turned on, is transmitted on a relatively frequent basis even though the information is only infrequently altered. Therefore processing time is often wasted in performing a redundant storage operation on unchanged data. Such unconditional storage has been required because no practical filter capable of blocking an extended arbitrarily long sequence of bits which is identical to another equally sequence of bits (referred to as negative filtering) was known. That is, to determine that a long sequence of bits was identical to another long sequence of bits, several registers and associated logic accommodating the same number of bits was required and which is not practical in a STB, even to save significant processing time otherwise wasted. The invention not only provides for negative filtering of an arbitrarily long sequence of bits but does so using the structure which can also be used for positive filtering and provides for

mixed positive and negative filtering (e.g. a completely arbitrary filter function) as well.

The invention performs this function not previously available with practical hardware by using several registers which only accommodate a small number of bytes each. As recited in independent claims 1 and 8, one of these registers include a not match register which controls whether positive or negative filtering is to be applied to the corresponding byte or bit of input data and combining compare result values in accordance with the positive or negative filtering as indicated by the bits of the not match register. As further recited in claim 1 and dependent claims, a mask is also provided which indicates the particular bits of interest and which are compared (all bits are necessarily of interest for negative filtering but possibly only a few bits need be compared in positive filtering) and different masks may be chosen in accordance with a filter ID for sequential portions of the data being filtered and the compare result values accumulated over the length of the data.

In summary, other arrangements for providing the positive filtering also provided by the invention are known but practical arrangements for negative filtering are not, much less an arrangement such as the invention which also provides for a completely arbitrary filter function including mixed positive and negative filtering over a bit string of arbitrary length with relatively little hardware which only slightly exceeds the hardware required for positive filtering of table ID values alone.

The Examiner, at page 5, first full paragraph, of the Examiner's Answer admits that Komi et al. does not teach or suggest most of the steps recited in claims 1 or 8, particularly the use of the logic state of a not match bit. This admission is tantamount to an admission that

Komi et al. does not select between or provide for mixing of positive and negative filtering. The Examiner's further discussion of Mao et al. does not directly mention any of the admitted deficiencies of Komi et al., particularly in regard to the use of a logic state of a not match bit in the filtering process. Therefore, it is clear that the Examiner has not approached making a *prima facie* demonstration of obviousness of any claim in the application and has not even shown that either reference provides any evidence of a level of ordinary skill in the art which would support the conclusion of obviousness which the Examiner asserts, particularly since neither reference leads to an expectation of success in realizing the meritorious effects of the invention in providing an arbitrary filter function including positive, negative and mixed filtering for data of arbitrary length with a practical amount of hardware. It is respectfully submitted that the responses the Examiner has made to the arguments previously presented to not alter or mitigate the Examiner's basic error in this regard concerning the ground of rejection now presented in this Appeal.

Specifically, in the Examiner's responses (A) and (B), the Examiner essentially asserts that a person capable of filtering on a PID in a TS header would be able to filter on a TID in a table section header. While that may or may not be the case, positive filtering for program extraction is admitted to be known and has nothing to do with the provision of negative filtering, much less in the same structure and possibly in combination with positive filtering. Moreover, such an observation regarding a packet ID does not demonstrate how either applied reference actually answers the explicit recitations of the claims in regard to determining the presence of transport table section in a

payload section of a packet from a table ID field in a packet header.

In the Examiner's response (C), the Examiner refers to references to capture of system table information and thereafter looking for changes in that information as not being within the claimed subject matter. However, it is again respectfully pointed out that this function which is largely specific to MPEG processing is, in fact, fully supported by the recitation in the independent claims of using logic states of not match bits for filtering which control and provide negative filtering for detecting the referenced changes in information. The Examiner's observation not only has nothing to do with the propriety *vel non* of the rejection for obviousness at issue but glosses over and seeks to avoid the fact that neither reference remotely teaches or suggests anything which might answer the explicit claim recitation of filtering based on, *inter alia*, the logic state of a not match bit which, in fact, supports the argued functions. Likewise, the Examiner's concluding sentence in this response simply asserts that one of ordinary skill would know that filtering comprises comparing data against a data pattern. However, the response is silent in regard to specifying the *type* of comparison or filtering using the logic state of a not match bit.

In a manner similar to the responses (A) and (B) as discussed above, the Examiner asserts, citing column 11, lines 7 and 8, the "same functionality" of subject matter described in Komi et al. as a filter ID in a control word. It is by no means clear from the cited passage that such is the case since the filter ID is recited in the claims as being used for selecting a "next mask" (claim 1, line 9) and, moreover, the Examiner's observation seems to have little, if anything, to do with

how Komi et al. answers the explicit recitations of the claims but rather tends to admit that it does not by drawing a comparison to substantially unrelated subject matter. At best, the passage cited by the Examiner refers to structures used in regard to the transfer of a packet from the PID filter to the packet read register which has nothing to do with controlling the function of a digital filter by specification of a "next mask", as claimed.

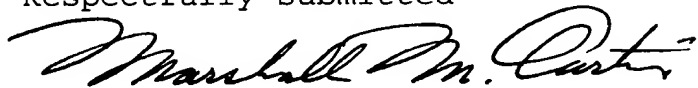
The Examiner's response (E) is not understood since it refers to arguments made concerning claims 3 and 10 while the lines identified contain arguments in regard to claim 5. Moreover, there is no mention of "Prior Art has been created from the PIDs located in packet headers" (whatever the Examiner may have meant to convey by such a phrase). In any case, the Examiner's assertion that MPEG data streams are digital data having headers has nothing to do with how Komi et al. or Mao et al. answers any of the features of the dependent claims argued anywhere in that paragraph of page 17 much less the provision of an arbitrary positive, negative or mixed digital filtering function for a data stream of arbitrary length with practical hardware.

CONCLUSION

For the reasons set forth in the Appellants' Brief on Appeal filed April 12, 2004 and the further comments made above in regard to the Examiner's responses to arguments made therein, it is respectfully submitted that the Examiner has not made a *prima facie* demonstration of the obviousness of any claim in the application but, rather, has admitted that Komi et al. does not teach or suggest subject matter which is claimed and supports

meritorious functions of the invention not previously available, while failing to show how Mao et al. mitigates any of the admitted deficiencies of Komi et al. or how either reference provides evidence of a level of ordinary skill in the art which could support the asserted conclusion of obviousness or lead to an expectation of success in realizing the meritorious effects of the invention. Therefore, since a *prima facie* demonstration of obviousness has not been made and the rejection of claims 1 - 14 is unsupported and in error. Accordingly reversal of the Examiner is respectfully requested.

Respectfully submitted

A handwritten signature in black ink, appearing to read "Marshall M. Curtis". The signature is fluid and cursive, with the first name "Marshall" being the most prominent part.

Marshall M. Curtis

Reg. 33,138

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